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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,029	09/19/2000	Subir Varma	164.1014.01	5865

22883 7590 06/09/2005

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EXAMINER

DUONG, FRANK

ART UNIT PAPER NUMBER

2666

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

09/664,029

**Applicant(s)**

VARMA ET AL.

**Examiner**

Frank Duong

**Art Unit**

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Office Action is a response to communications dated 04/13/05. Claims 1-17 are pending in the application.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbert et al (USP 6,016,311) (hereinafter "Gilbert").

Regarding **claim 1**, in accordance with Gilbert reference entirety, Gilbert discloses a method of managing time division duplexing (TDD) across plural channels (*Figure 4; channels of CPEs 110*), comprising the step of:

synchronizing frames across the plural time division multiple access (TDMA) channels between base stations so that upstream frames and downstream frames coincide across the plural channels (*note: In the Abstract and thereafter, Gilbert discloses the communication channels are configured to have symmetric uplink/downlink bandwidths between the CPEs 104 and the base station 106. Moreover, at col. 13, line 40 and thereafter, Gilbert further discloses co-channel interference is reduced by synchronizing the cell transmit/receive base stations 106 with or across cluster 160*). Gilbert fails to explicitly disclose frames across the plural time division multiple access (TDMA) channels are synchronized between a base station and CPEs. At col. 13, lines 48-50, Gilbert explicitly discloses “*transmissions and receptions of all base stations 106 within a cluster 160 are preferably synchronized*”. This statement must also imply the transmission between the base station 106 and the CPEs within a cell 102 must also preferably synchronize. In order for this to happen, it is obvious and contemplated by those skilled in the art that frames, across the plural time division multiple access (TDMA) channels between base station 106 and CPE within cell 102, are synchronized so that upstream frames and downstream frames coincide across the plural channels.

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales discussed above), Gilbert further discloses assigning one channel to each of plural consumer provided equipment (110), wherein each consumer provided equipment receives media access protocol messages (*address information*) on its assigned channel (*col. 10, lines 18-20*).

Regarding **claim 3**, in addition to features recited in base claim 2 (see rationales discussed above), Gilbert further discloses a base station controller (Fig. 5; 122 or Fig. 9; 162) generates the media access protocol messages, and wherein the media access protocol messages instruct the consumer provided equipment to switch channels so as to receive data burst (*col. 13, lines 51-59 and col. 10, lines 18-20 and col. 13, lines 4-18*).

Regarding **claim 4**, in addition to features recited in base claim 3 (see rationales discussed above), Gilbert further discloses wherein the base station controller includes a centralized scheduler (cluster controller 162) that allocates channels and slots in those channels to the consumer provided equipment for receipt of the data burst (*col. 13, lines 53-54 and thereafter*).

Regarding **claim 5**, in accordance with Gilbert reference entirety, Gilbert discloses a method of receiving time division duplexed messages, comprising the step of: switching channels based on received media access control messages (system parameters) so as to receive data burst on plural channels (*col. 13, lines 51-59 and col. 10, lines 18-20 and col. 13, lines 4-18, Gilbert discloses system parameters are monitored in order to adaptively and dynamically change the channel time slot ratio based upon the varying bandwidth requirement*).

Regarding **claim 6**, in accordance with Gilbert reference entirety, Gilbert discloses a base station (Fig. 4; element 106) that manages time division duplexing (TDD) across plural channels (Figure 4; channels of CPEs 110), comprising:  
an input/output interface (not shown; inherent as shown in Fig. 6);

a transceiver (*Fig. 6; 132*);

a controller that synchronizes frames (*Figure 6; 128*) across the plural time division multiple access (TDMA) channels between base stations 106 and controller 160 so that upstream frames and downstream frames coincide across the plural channels (*note: In the Abstract and thereafter, Gilbert discloses the communication channels are configured to have symmetric uplink/downlink bandwidths between the CPEs 104 and the base station 106. Moreover, at col. 13, line 40 and thereafter, Gilbert further discloses co-channel interference is reduced by synchronizing the cell transmit/receive base stations 106 with or across cluster 160*). Gilbert fails to explicitly disclose frames across the plural time division multiple access (TDMA) channels are synchronized between a base station and CPEs. At col. 13, lines 48-50, Gilbert explicitly discloses *"transmissions and receptions of all base stations 106 within a cluster 160 are preferably synchronized"*. This statement must also imply the transmission between the base station 106 and the CPEs within a cell 102 must also preferably synchronize. In order for this to happen, it is obvious and contemplated by those skilled in the art that frames, across the plural time division multiple access (TDMA) channels between base station 106 and CPE within cell 102, are synchronized so that upstream frames and downstream frames coincide across the plural channels.

Regarding **claim 7**, in addition to features recited in base claim 6 (see rationales discussed above), Gilbert further discloses wherein the controller further assigns one channel to each of plural consumer provided equipment (110), wherein each consumer

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provided equipment receives media access protocol messages (*address information*) on its assigned channel (*col. 10, lines 18-20*).

Regarding **claim 8**, in addition to features recited in base claim 7 (see rationales discussed above), Gilbert further discloses wherein the controller (Fig. 5; 122 or Fig. 9; 162) generates the media access protocol messages, and wherein the media access protocol messages instruct the consumer provided equipment to switch channels so as to receive data burst (*col. 13, lines 51-59 and col. 10, lines 18-20 and col. 13, lines 4-18*).

Regarding **claim 9**, in addition to features recited in base claim 8 (see rationales discussed above), Gilbert further discloses wherein the controller further comprises a centralized scheduler (*cluster controller 162*) that allocates channels and slots in those channels to the consumer provided equipment for receipt of the data burst (*col. 13, lines 53-54 and thereafter*).

Regarding **claim 10**, in accordance with Gilbert reference entirety, Gilbert discloses a consumer provided equipment (Fig. 7 or 8 and col. 11, line 16 to col. 13, line 3) that receives time division duplexed messages, comprising:

a transceiver (146 or 158) that can dynamically switch between plural channels; and a controller (148 or 156) for controlling the transceiver, wherein based on the received media access control protocol messages, the consumer provided equipment switches channel so as to receive data bursts on plural channels. (*note: In the Abstract and thereafter, Gilbert discloses the communication channels are configured to have symmetric uplink/downlink bandwidths between the CPEs 104 and the base station 106.*

*Moreover, at col. 13, line 40 and thereafter, Gilbert further discloses co-channel interference is reduced by synchronizing the cell transmit/receive base stations 106 with or across cluster 160).* Gilbert fails to explicitly disclose frames across the plural time division multiple access (TDMA) channels are synchronized between a base station and CPEs. At col. 13, lines 48-50, Gilbert explicitly discloses *"transmissions and receptions of all base stations 106 within a cluster 160 are preferably synchronized"*. This statement must also imply the transmission between the base station 106 and the CPEs within a cell 102 must also preferably synchronize. In order for this to happen, it is obvious and contemplated by those skilled in the art that frames, across the plural time division multiple access (TDMA) channels between base station 106 and CPE within cell 102, are synchronized so that upstream frames and downstream frames coincide across the plural channels.

*(note: computer code or programming instruction of claim 11 is equated to corresponding to method step of claim 1. Moreover, at col. 18, it is disclosed the ATDD method and apparatus may be implemented in hardware, software, or a combination of both)*

Regarding **claim 11**, in accordance with Gilbert reference entirety, Gilbert discloses a memory (*Fig. 6; 128*) storing information including instructions executable by a processor (*Fig. 6; 128*) to manage time division duplexing (TDD) across plural channels (*Figure 4; channels of CPEs 110*), the instructions comprising:

synchronizing frames across the plural time division multiple access (TDMA) channels between base stations 106 and controller 160 so that upstream frames and



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downstream frames coincide across the plural channels (*note: In the Abstract and thereafter, Gilbert discloses the communication channels are configured to have symmetric uplink/downlink bandwidths between the CPEs 104 and the base station 106. Moreover, at col. 13, line 40 and thereafter, Gilbert further discloses co-channel interference is reduced by synchronizing the cell transmit/receive base stations 106 with or across cluster 160*). Gilbert fails to explicitly disclose frames across the plural time division multiple access (TDMA) channels are synchronized between a base station and CPEs. At col. 13, lines 48-50, Gilbert explicitly discloses "*transmissions and receptions of all base stations 106 within a cluster 160 are preferably synchronized*". This statement must also imply the transmission between the base station 106 and the CPEs within a cell 102 must also preferably synchronize. In order for this to happen, it is obvious and contemplated by those skilled in the art that frames, across the plural time division multiple access (TDMA) channels between base station 106 and CPE within cell 102, are synchronized so that upstream frames and downstream frames coincide across the plural channels.

Regarding **claim 12**, in addition to features recited in base claim 11 (see rationales discussed above), Gilbert further discloses assigning one channel to each of plural consumer provided equipment (110), wherein each consumer provided equipment receives media access protocol messages (*address information*) on its assigned channel (*col. 10, lines 18-20*).

Regarding **claim 13**, in addition to features recited in base claim 12 (see rationales discussed above), Gilbert further discloses a base station controller (Fig. 5;

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122 or *Fig. 9; 162*) generates the media access protocol messages, and wherein the media access protocol messages instruct the consumer provided equipment to switch channels so as to receive data burst (*col. 13, lines 51-59 and col. 10, lines 18-20 and col. 13, lines 4-18*).

Regarding **claim 14**, in addition to features recited in base claim 13 (see rationales discussed above), Gilbert further discloses wherein the base station controller includes a centralized scheduler (cluster controller 162) that allocates channels and slots in those channels to the consumer provided equipment for receipt of the data burst (*col. 13, lines 53-54 and thereafter*).

Regarding **claim 15**, in accordance with Gilbert reference entirety, Gilbert discloses a memory storing information including instructions, the instructions executable by a processor to receive time division duplexed messages, the instructions comprising: switching channels based on received media access control messages so as to receive data burst on plural channels (*col. 13, lines 51-59 and col. 10, lines 18-20 and col. 13, lines 4-18*).

Regarding **claim 16**, in accordance with Gilbert reference entirety, Gilbert discloses an apparatus for managing time division duplexing (TDD) across plural channels (*Figure 4; channels of CPEs 110*), comprising:

means for synchronizing (*base station 106 or cluster controller 162*) frames across the plural time division multiple access (TDMA) channels between base stations 106 and controller 160 so that upstream frames and downstream frames coincide across the plural channels (*note: In the Abstract and thereafter, Gilbert discloses the*

*communication channels are configured to have symmetric uplink/downlink bandwidths between the CPEs 104 and the base station 106. Moreover, at col. 13, line 40 and thereafter, Gilbert further discloses co-channel interference is reduced by synchronizing the cell transmit/receive base stations 106 with or across cluster 160).*

Gilbert fails to explicitly disclose frames across the plural time division multiple access (TDMA) channels are synchronized between a base station and CPEs. At col. 13, lines 48-50, Gilbert explicitly discloses *"transmissions and receptions of all base stations 106 within a cluster 160 are preferably synchronized"*. This statement must also imply the transmission between the base station 106 and the CPEs within a cell 102 must also preferably synchronize. In order for this to happen, it is obvious and contemplated by those skilled in the art that frames, across the plural time division multiple access (TDMA) channels between base station 106 and CPE within cell 102, are synchronized so that upstream frames and downstream frames coincide across the plural channels.

Regarding **claim 17**, in accordance with Gilbert reference entirety, Gilbert discloses an apparatus for receiving time division duplexed messages, comprising:

means for switching channels (110) based on received media access control messages so as to receive data burst on plural channels (*col. 13, lines 51-59 and col. 10, lines 18-20 and col. 13, lines 4-18 and Fig. 7 or 8*).

### ***Response to Arguments***

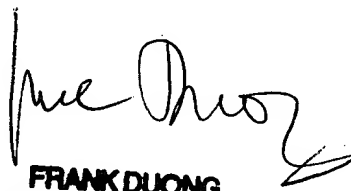
3. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is 571-272-3164. The examiner can normally be reached on 7:00AM-3:30PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**FRANK DUONG**  
**PRIMARY EXAMINER**

June 6, 2005